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REGISTERED PATENT ATTORNEY

November 7, 2006

MAIL STOP APPEAL BRIEF-PATENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: United States Patent Application  
Serial No.: 10/060,027  
Title: Business Method for Memorializing Vehicle Purchase Transactions  
Our Reference No.: 30457.36

Dear Sirs:

Enclosed for filing are the following documents:

1. Appeal Brief (in triplicate) (38 sheets each);
2. Check in the amount of \$250.00; and
3. Acknowledgment Post Card.

The Commissioner is hereby authorized to charge any deficiency in fees or credit any overpayment to Deposit Account No. 03-3483.

Respectfully submitted,

*Court B. Allen*

Courtenay B. Allen  
Reg. No. 43,469

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cc: Mr. Bob Corbin (w/ encl.)  
ic: Mr. David G. Henry [Firm] (w/ encl.)  
Mr. Matthew Jennings [Firm] (w/o encl.)



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

IN RE APPLICATION OF:  
**Gerald Lacour, Garrett Lacour, Robert  
Corbin, and Matt Nowicky**

ATTORNEY DKT. NO. **30457.36**

SERIAL NO. **10/060,027**

GROUP ART UNIT: **3627**

FILED: **January 28, 2002**

EXAMINING ATTORNEY: **Michael Cuff**

**TITLE: BUSINESS METHOD FOR  
MEMORIALIZING VEHICLE  
PURCHASE TRANSACTIONS**

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**APPEAL BRIEF**

This Appeal Brief is being filed within two (2) months of the filing of a Notice of Appeal on September 7, 2006. Applicant respectfully requests review of this Appeal Brief.

**REAL PARTY IN INTEREST**

The Real Party in Interest of the present application is Innovative Aftermarket Systems, L.P., a Texas limited partnership, having its principle office at 12800 Angel Side Drive, Leander, Texas, 78641. The inventors named in this Application, Gerald Lacour, Garrett Lacour, Robert Corbin, and Matt Nowicky, are each employees of Innovative Aftermarket Systems, L.P., and have assigned their respective rights, title, and interest in this application to Innovative Aftermarket Systems, L.P.

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## **RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to Appellant, the Appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## **STATUS OF CLAIMS**

The present application contains ten (10) claims. Claims 1 – 6 have been canceled. Claims 7 – 10 stand rejected. Claim 7 is independent. Claims 8 – 9 depend from Claim 7. Claim 10 depends from Claim 8. The rejection of each of Claims 7 – 10 is appealed. A copy of the currently pending claims is attached hereto as **Appendix A**.

## **STATUS OF AMENDMENTS**

No amendments were filed subsequent to final rejection.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

Claim 7 is directed to a novel business method for documenting vehicle purchase transactions involving a vehicle dealership representative and a consumer. The business method involves "creating a digital, audio-visual record of communications between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction; creating a computer-searchable identifier of said digital, audio-visual record; and storing said digital, audio-visual record of said computer-searchable identifier in a computer database." *See* Response to Final Office Action dated March 29, 2006, "Claim Amendments," p. 7. In preparation for practicing the claimed method, a digital video camera may be installed on a wall or other suitable location in the financial closing office(s) of a vehicle dealership, where the camera can record the images of the vehicle dealership representative and the consumer. The camera may be connected, either directly or through a wireless connection, to a personal computer. An audio

microphone may also be connected to the personal computer and may be located in an area on the closing desk where it can record the voices of the vehicle dealership representative and the consumer. (Application, p. 7, l. 4-12). The digital images and audio stream, respectively, from the video camera and the microphone may be recorded and stored into appropriate data files as the transaction goes on, thereby creating a digital, audio-visual record of communication between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction. (Application, Page 8, l. 6-9). A computer searchable identifier, such as, for example, the customer's name, address, vehicle purchased, time, date, etc., may be entered for cataloging the digital, audio-visual record. (Application, p. 7, l. 22 – p.8, l. 3). The digital audio-visual record and the computer-searchable identifier may be saved to a searchable computer database which may be on indelible media. (Application, p. 8, l. 13 – p.9, l. 10).

The claimed business method allows the database to be searched such that previously recorded digital, audio-visual records can be readily located and subsequently replayed. For example, one can search for all transactions on a particular date, by a certain sales staff member, involving a particular customer, or involving a particular vehicle or product, and easily retrieve these stored transactions. (Application, p. 8, l. 23 – p. 9, l. 10).

Thus, the subject business method allows for a permanent record of what happened during the actual closing of a vehicle purchase transaction, supplementing the actual signed paperwork. This permanent record can be used in the event any discrepancies or disputes arise in the future regarding the transaction, thereby protecting all parties to the transaction. (Application, p. 9, l. 15-20). Additionally, managers can monitor all transactions or spot check transactions to ensure employee compliance with fair business tactics, local, state, or federal laws, and to further train sales associates in proper sales strategy. (Application, p. 10, l. 2-7).

## GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 7 – 10 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over **Haber et al.** (U.S. 5,136,646) in view of **Eldridge** (Eldridge, Earle, "More car dealers now videotape sales," USA Today, v. 19, n. 204, p. 1B(1), July 3, 2001).

**Haber et al.** and **Eldridge** are attached hereto as **Appendices B** and **C**, respectively.

## ARGUMENT

### I. Claim 7 Is Not Obvious In View of **Haber et al.** and **Eldridge**

The Examiner has stated that claim 7 is unpatentable over **Haber et al.** in view of **Eldridge**. Specifically, the Examiner has stated that **Haber et al.** teaches all aspects of claim 7 except "for specifying that the communications between a vehicle dealership representative and a consumer would be the object of the audio-visual record." Final Office Action at 2. The Examiner argued the **Eldridge** news article teaches "the growing practice by car dealers of videotaping the sales transactions \* \* \* to protect customers from their finance and insurance staff." Final Office Action at 3. Contrary to the Examiner's contentions, neither **Haber et al.** nor **Eldridge**, alone or in combination, teaches, discloses, or suggests the novel business method recited in claim 7. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

#### A. Summary of **Haber et al.**

**Haber et al.** discloses a method of sequentially time-stamping a series of digital documents with a cryptographic catenation procedure such that subsequent efforts to change the content of the digital documents or manipulate the time stamps will be apparent. See **Haber et al.**, col. 2, l. 50-64; col. 4, l. 22-40. The disclosed method involves an outside time-stamping agency (TSA), which time stamps a submitted document "to create a receipt by adding digital

data signifying the [time of submission], concatenates the receipt with the current cryptographic catenation of its prior time stamp receipts, and creates a new catenation from the composite document by means of a deterministic function \* \* \*.” *Id.* at col. 3, lines 9-22. The outside TSA described in **Haber et al.** “relies upon the relatively continuous flow of documents from the universe of authors through the facilities of the TSA” in maintaining a catenated chain of time stamp receipts, wherein each link in the chain depends on the series of receipts preceding it. *Id.* at col. 4, lines 41-55. “Thus, each of the time-stamped catenate certificates issued by the TSA is fixed in the continuum of time and none can be falsely prepared by the TSA, since any attempt to regenerate a catenate certificate number \* \* \* would reveal the discrepancy.” *Id.* at col. 4, lines 63-68. The **Haber et al.** method “transfers control of the time-stamping step from the author to an independent agent and removes from the author the ability to influence the agent in the application of other than a truthful time stamp.” *Id.* at col. 2, l. 64-68.

#### **B. Summary of Eldridge**

**Eldridge** is a news article that focuses primarily on the various privacy issues arising from the videotaping of customers, and no specific methodology or implementation is expressly described. The article refers to a vehicle dealer management firm, namely, Auto Gap of Madisonville, La., which “began selling a video camera setup 3 years ago,” **Eldridge** at ¶ 9-10, which apparently was used to record vehicle sales transactions on videotape. In discussing the relative merits of such surveillance systems, the article states that “[d]ealers say tapes have helped customers as well as themselves.” *Id.* at ¶ 14.

#### **C. Distinguishing Haber et al. and Eldridge from Claim 7**

The Examiner contends that **Haber et al.** “shows a system for time-stamping a digital document, for example any alphanumeric, video, audio \* \* \* or pictorial data,” wherein the

“representation is transmitted to an outside agency (storage database)” and “[t]he content of a document and a time stamp of its existence are ‘indelibly’ incorporated into the digital data of the document,” such that “[i]f further proof were demanded upon adversary allegation, the document or video could be retrieved \* \* \* to establish the date on which a document was created and to prove that the text of a document in question is in fact the same as that of the original dated document.” Final Office Action at 2. The Examiner contends that **Haber et al.** teaches all aspects of claim 7 “except for specifying that the communications between a vehicle dealership representative and a consumer would be the object of the audio-visual record.” *Id.* The Examiner cited **Eldridge** for the practice of videotaping sales transactions by car dealers. *Id.* at 3. The Examiner concludes claim 7 would have been obvious based on **Haber et al.** in view of **Eldridge**. However, as set forth in detail below, neither **Haber et al.** nor **Eldridge**, alone or in combination, teaches, discloses, or suggests the method of claim 7.

1. *Creating a digital, audio-visual record of communications between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction*

Neither **Haber et al.** nor **Eldridge** discloses or suggests creating a digital, audio-visual record of communications between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction. Although **Haber et al.** discloses that a digital document “may broadly comprise any alphanumeric, audio, or pictorial presentation,” *see Haber et al.* at col. 3, l. 12-13, **Haber et al.** does not disclose or suggest a digital audio-visual record, much less such a record of communications between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction. In fact, **Haber et al.** appears to be focused on digital documents composed of textual strings and characters, *see Haber et al.* at col.

6, l. 1-10, which is the only example given, so it is not at all clear whether the method of time-stamping disclosed in **Haber et al.** would be applicable to a digital audio-visual record, even if such a record were disclosed. Further, **Eldridge** does not supply this teaching, which is missing from **Haber et al.**, because **Eldridge** merely discloses videotaping on tapes; **Eldridge** does not disclose any details about what type of recording (whether digital or otherwise) was made.

2. *Creating a computer-searchable identifier of said digital, audio-visual record*

Neither **Haber et al.** nor **Eldridge** discloses or suggests creating a computer-searchable identifier of a digital, audio-visual record. As discussed previously, **Haber et al.** merely discloses a method of authenticating the date on which a particular document is transmitted to a third-party, namely an "outside time-stamping agency (TSA)," by creating a catenate value. "The resulting catenate value is then included with time and other identifying data in a document, now a certificate of the temporal existence of the original document, which is transmitted back to the author where it will be held for later use in any required proof of such existence." **Haber et al.** at col. 3, lines 21-27. In other words, the author of the media at issue in **Haber et al.** receives a singular, encrypted certificate or receipt for each document submitted to the TSA. **Haber et al.** does not teach or suggest that such certificates are searchable by computer.

Moreover, **Eldridge** does not supply this missing teaching or suggestion. **Eldridge** does not disclose or suggest use of a computer at all, much less creating a computer-searchable identifier of a digital, audio-visual record. Therefore, there is no teaching or suggestion to combine **Eldridge** with **Haber et al.**

3. *Storing said digital, audio-visual record and said computer-searchable identifier in a computer database*



Neither **Haber et al.** nor **Eldridge** discloses or suggests storing said digital, audio-visual record and said computer-searchable identifier in a computer database. The third-party TSA described in **Haber et al.** apparently does not retain a copy of the submitted digital document, but merely maintains a record of catenated certificates or receipts. *See Haber et al.* at col. 4, l. 22-29. In fact, the TSA may not even receive the full document, but a reduced file generated by a hash function. *See id.* at col. 3, l. 28-36. The TSA is able to authenticate documents precisely because of its independent status as an uninterested clearinghouse for document authentication, and “[t]he process of the invention relies upon the relatively continuous flow of documents from the universe of authors through the facilities of the TSA.” **Haber et al.** at col. 4, lines 41-43. The catenated certificates or receipts comprise an alphanumeric representation of the submitted digital document, as well as portions of previously submitted documents. “[A]ny change in the original document content, event to the extent of a single word or a single bit of digital data, results in a different document that would hash to a completely different fingerprint value.” *Id.* at col. 3, lines 59-62. “Although a document cannot be recovered from its representative hash value, a purported original document can nonetheless be proven in the [**Haber et al.**] time-stamping procedure by the fact that a receipt concatenation comprising a true copy of the original document representation will always hash to the same catenate value as is contained in the author’s certificate, assuming use of the original hashing algorithm.” *Id.* at col. 3, line 62 – col. 4, line 2. Therefore, the authentication method disclosed in **Haber et al.** does not require that the TSA store the actual digital documents themselves, and **Haber et al.** does not disclose or suggest such storing, much less storing of a computer-searchable identifier of a digital, audio-visual record. When the issue of authentication arises, parties in possession of the purportedly original documents need only compare the catenate values of the documents in controversy to the

catenated receipts of the originally submitted documents. As such, **Haber et al.** does not teach or fairly suggest storing said digital, audio-visual record and said computer-searchable identifier in a computer database.

Furthermore, **Eldridge** does not supply any teaching or suggestion in this regard. **Eldridge** makes no mention of a digital, audio-visual record or a computer-searchable identifier of such digital, audio-visual record, much less storing the same in a computer database. Therefore, there is no suggestion to combine **Eldridge** and **Haber et al.** as argued by the Examiner.

## **II. Claim 8 Is Not Obvious In View of Haber et al. and Eldridge.**

Neither **Haber et al.** nor **Eldridge** discloses recording a digital audio-visual record and a computer-searchable identifier onto substantially indelible recording media as recited in claim 8. The Examiner argues that **Haber et al.** teaches the use of substantially indelible media by disclosing that “the content of a document and a time stamp of its existence are ‘indelibly’ incorporated into the digital data of the document \* \* \*.” **Haber et al.** at col. 2, line 54-57. However, further disclosure in **Haber et al.** makes clear that this so-called “indelible incorporation” refers to the encryption process itself, whereby “it is not possible to change any bit of the resulting time-stamped data *without such a change being apparent.*” *Id.* at col. 2, line 57-59 (emphasis added). This “indelible incorporation” does not refer, as in Appellant’s application, to the storage of audio-visual data on indelible media “such as CD-R, DVD-R, or DVD-RAM disks, with the DVD-R being of the highest capacity and most indelible format known to date.” Application, page 8, l. 15-18. And once again, **Eldridge** simply has no teaching or suggestion whatsoever in this regard. Therefore, claim 8 is not obvious in view of **Haber et al.** and **Eldridge**.

### III. Claims 9 and 10 Are Not Obvious in View of Haber et al. and Eldridge.

Neither **Haber et al.** nor **Eldridge** discloses or suggests searching for and retrieving said digital, audio-visual record using said computer-searchable identifier, and playing said digital, audio-visual record to confirm the contents. As discussed previously, **Haber et al.** does not teach or fairly suggest a database for storing audio-visual records and computer-searchable identifiers, much less searching for and retrieving audio-visual records using such computer-searchable identifiers and playing the audio-visual record to confirm the contents. Indeed, **Haber et al.** teaches away from the subsequent search and retrieval of audio-visual records by stating that “a document cannot be recovered from its representative hash value \* \* \*.” **Haber et al.** at col. 3, line 62-63. Even assuming, *arguendo*, that practitioners of the **Haber et al.** method were able to search an actual database using their catenate certificates, they would be unable to reconstitute, i.e., retrieve and play back, the original recording using the TSA’s records. Verification of contents of digital documents as disclosed in **Haber et al.** is accomplished through comparison of catenate certificate values, not playing a digital audio-visual record. And one again, **Eldridge** does not supply this missing teaching or suggestion.

### IV. No Motivation to Combine

Furthermore, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the **Haber et al.** and **Eldridge** references or in the knowledge of a person of ordinary skill in the art, to modify the references to arrive at the Applicant’s claimed invention. See, e.g., *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989) (“Although the Commissioner suggests that [the structure in the primary reference] could readily be modified to form the [claimed] structure, ‘[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art

suggested the desirability of the modification.’ ”); *see also In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991) (PTO erred in rejecting patent claims as *prima facie* obvious since the prior art did not suggest the combination or convey to those of ordinary skill in the art a reasonable expectation of success). The burden rests on the Examiner to prove the desirability of such a modification. “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). The Examiner simply has not carried that burden.

A simple finding of somewhat similar individual elements in the references and the claimed invention is not sufficient to a determination of obviousness. There is a rigorous requirement for “a showing or a teaching or motivation to combine the prior art references” in order to avoid improper hindsight analysis in search of obviousness. *See In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q. 2d 1614, 1617 (Fed. Cir. 1999). As noted by the court in *Dembiczak*, “broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence.” *Id.* It is impermissible to use “hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1988).

Moreover, a “rejection cannot be predicated on the mere identification \* \* \* of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.” *In re Werner Ketzab*, 217 F.3d 1365,

1371, 55 U.S.P.Q. 2d 1313, 1317 (Fed. Cir. 2000). Therefore, the cited references must be analyzed for such a teaching or motivation to combine, and not simply a hindsight mosaic of claimed ingredients. Appellant has demonstrated that the collection of references cited by the Examiner is nothing more than a hindsight mosaic of claimed ingredients and, in fact, quite a bit less.

The Examiner has provided no reason why a person of ordinary skill in the art at the time of Applicant's invention should desire to modify **Haber et al.**, or combine **Haber et al.** with **Eldridge**, to arrive at Applicant's invention. Therefore, Applicant respectfully submits that the Examiner has not met the burden and urges withdrawal of the Examiner's § 103 rejection.

#### **V. Objective Evidence of Nonobviousness**

Lastly, even if the Examiner had presented a *prima facie* case of obviousness, Applicant has presented compelling objective evidence of nonobviousness to overcome such rejection. Specifically, the industry trade publication attached hereto as **Appendix D** indicates that Applicant's claimed invention has solved a long felt but heretofore unsolved need, has achieved surprising results, and has achieved wide industry acclaim and commercial success. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). First, regarding unmet need, Appellant notes that according to the industry trade publication attached hereto as **Appendix D**, "[d]ealers who started taping several years [prior to May/June 2004] used bulky cameras and VHS tapes." *See Appendix D* at p. 7. Clearly, that awkward and ungainly system was not conducive to the consistent and convenient recording, retrieval, and playback of automotive sales transactions. The author of the article goes on to note that the Appellant's "SmartEye system lets dealers record only customer transactions \* \* \* [which] are stored in a searchable database and can be

pulled up using time, customer name, or type of transaction.” *Id.* at 7-8. Appellant’s method has satisfied car dealers’ need for a better recording system.

Under the heading “RECORDING PAYS OFF,” the author of the article in **Appendix D** then goes on to describe the benefits experienced by various car dealerships in adopting the Appellant’s technology. *See id.* at 5-6. The article notes that “[b]ecause the system holds F&I managers to soliciting all customers all the time, Hall Automotive’s service-contract penetration rose from 50 percent to about 62 percent. GAP rose from 27 percent to 42 percent, and car care climbed from about 28 percent to 35 percent.” *Id.* at 5. Another customer, the Roger Beasley Mazda dealerships, “have seen similar gains. ‘Before I had cameras I was running around \$575 a copy,’ says [Roger Beasley’s Manager] Bagan. ‘Since the cameras we’re at \$850 a copy. I went from a 34 percent warranty penetration to 58 percent. I’ve had about a 10 to 12 percent bump across the board on all my products due to the simple fact that everybody gets presented everything every time.’ ” *Id.* at 5-6. In remarking on these surprising results, the article posits that “[a]lthough other factors may have influenced these increases, it’s indisputable that being taped has motivated finance managers to be thorough, consistent and conscientious.” *Id.* at 6. In other words, there is a direct and surprising link between use of the Appellant’s technology and an increase in sales.

Apart from the positive tone struck by the F&I trade publication in reference to Appellant’s claimed technology, the article goes on to note that “at least 600 to 700” car dealerships nationwide have adopted Appellant’s system. *Id.* This remarkable level of industry adoption, combined with laudatory comments found throughout the F&I trade publication, indicates that the technology covered by the subject claims enjoys widespread commercial success and industry acclaim. Indeed, despite the availability of recording equipment, the

unwieldy nature of video tapes, as well as a lack of practicable storage and retrieval methods or systems, heretofore provided sufficient disincentive for dealerships wishing to record and monitor sales events. The Appellant's technology overcame those limitations and provided a business method having increased utility and surprising results now enjoyed by those customers using the present method. The methods of the present application are now widely adopted in the industry precisely because of the differences from any known prior art; that is, the claimed methods not only work, but they work so well and with such surprising results that they have garnered widespread industry acclaim. Consequently, the claimed methods are not obvious in view of **Haber et al.** and **Eldridge**. See *Graham*, 383 U.S. at 17-18.

### CONCLUSION

For the foregoing reasons, Appellant believes that the Examiner's rejections of Claims 7 – 10 were erroneous, and reversal of his decision and allowance of those claims are respectfully requested.

Respectfully submitted,

COX SMITH MATTHEWS INCORPORATED

Date: 11-7-2006

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## **APPENDIX A**

### **CURRENTLY PENDING CLAIMS**

1. (canceled).
2. (canceled).
3. (canceled).
4. (canceled).
5. (canceled).
6. (canceled).
7. (previously presented) A business method for documenting vehicle purchase transactions comprising the steps of:
  - creating a digital, audio-visual record of communications between a vehicle dealership representative and a consumer during all or part of a vehicle purchase transaction;
  - creating a computer-searchable identifier of said digital, audio-visual record; and
  - storing said digital, audio-visual record and said computer-searchable identifier in a computer database.
8. (previously presented) The business method of Claim 7 further comprising the step of recording said digital, audio-visual record and said computer-searchable identifier onto substantially indelible recording media.
9. (previously presented) The business method of Claim 7 further comprising the step of, at a time subsequent to said vehicle purchase transaction, searching for and retrieving said digital, audio-visual record using said computer-searchable identifier, and playing said digital, audio-visual record to confirm the contents of communications between said vehicle dealership representative and said consumer during said vehicle purchase transaction.



10. (previously presented) The business method of Claim 8 further comprising the step of, at a time subsequent to said vehicle purchase transaction, searching for and retrieving said digital, audio-visual record using said computer-searchable identifier, and playing said digital, audio-visual record to confirm the contents of communications between said vehicle dealership representative and said consumer during said vehicle purchase transaction.

**Appendix B. HABER ET AL.**

[54] **DIGITAL DOCUMENT TIME-STAMPING  
WITH CATENATE CERTIFICATE**

[75] Inventors: Stuart A. Haber, New York, N.Y.;  
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Morristown, N.J.

[73] Assignee: Bell Communications Research, Inc.,  
Livingston, N.J.

[21] Appl. No.: 666,896

[22] Filed: Mar. 8, 1991

[51] Int. Cl.<sup>5</sup> ..... H04L 9/00; H04L 9/30

[52] U.S. Cl. .... 380/49; 380/23;  
380/25; 380/30

[58] Field of Search ..... 380/3-5,  
380/9, 10, 28, 30, 49, 50

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

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4,881,264	11/1989	Merkle	380/50 X
4,972,474	11/1990	Sabin	380/28
5,001,752	3/1991	Fischer	380/30 X

**OTHER PUBLICATIONS**

"The MD4 Message Digest Algorithm", R. L. Rivest,  
Crypto '90 Abstracts, Aug. 1990, pp. 281-291.

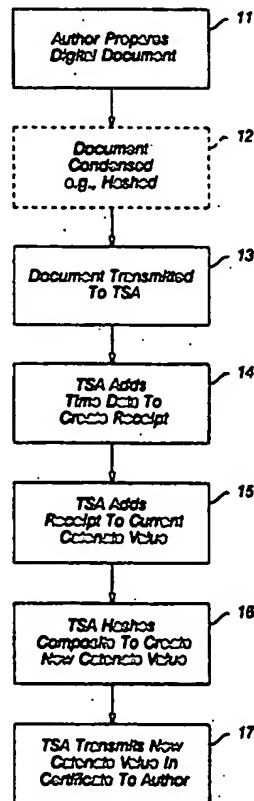
Primary Examiner—Bernarr E. Gregory

Attorney, Agent, or Firm—Leonard Charles Suchyta;  
Lionel N. White

[57] **ABSTRACT**

A system for time-stamping a digital document, for example any alphanumeric, video, audio, or pictorial data, protects the secrecy of the document text and provides a tamper-proof time seal establishing an author's claim to the temporal existence of the document. Initially, the document may be condensed to a single number by means of a one-way hash function, thereby fixing a unique representation of the document text. The document representation is transmitted to an outside agency where the current time is added to form a receipt. The agency then certifies the receipt by adding and hashing the receipt data with the current record catenate certificate which itself is a number obtained as a result of the sequential hashing of each prior receipt with the extant catenate certificate. The certified receipt bearing the time data and the catenate certificate number is then returned to the author as evidence of the document's existence. In later proof of such existence, the certificate is authenticated by repeating the certification steps with the representation of the alleged document, the alleged time data, and the catenate certificate number appearing in the agency's records immediately prior to the certificate number in question. Only if the alleged document is identical to the original document will the original and repeat certificate numbers match.

13 Claims, 2 Drawing Sheets



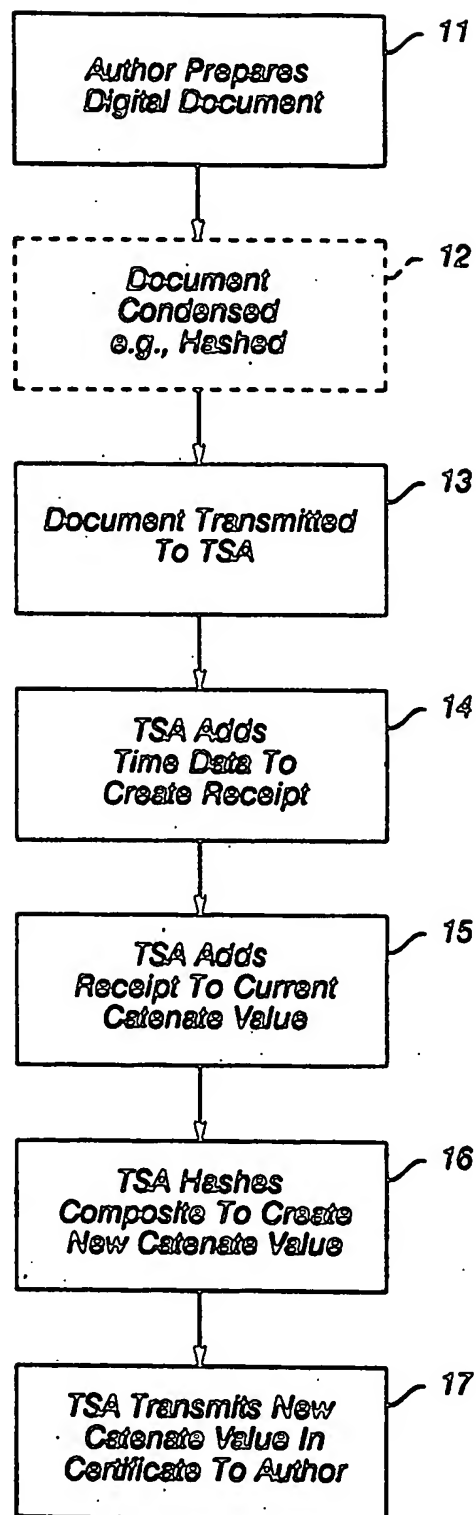
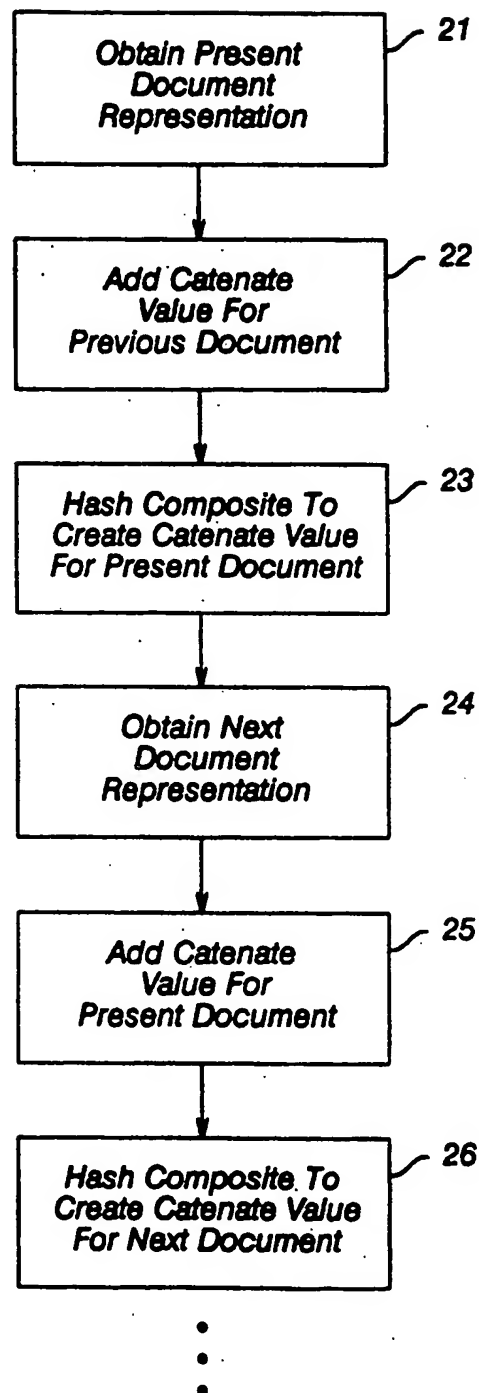


FIG. 1

**FIG. 2**

# DIGITAL DOCUMENT TIME-STAMPING WITH CATENATE CERTIFICATE

## BACKGROUND OF THE INVENTION

In many situations there is a need to establish the date on which a document was created and to prove that the text of a document in question is in fact the same as that of the original dated document. For example, in intellectual property matters it is often crucial to verify the date on which a person first put into writing the substance of an invention. A common procedure for this "time-stamping" an inventive concept comprises daily notations of one's work in a laboratory notebook. Indelibly dated and signed entries are made one after another on each page of the notebook where the sequentially numbered, sewn-in pages make it difficult to revise the record without leaving telltale signs. The validity of the record is further enhanced by the regular review and signed witnessing by a generally disinterested third party. Should the time of the concept become a matter for later proof, both the physical substance of the notebook and the established recording procedure serve as effective evidence in substantiating the fact that the concept existed at least as early as the notebook witness date.

The increasingly widespread use of electronic documents, which include not only digital representations of readable text but also of video, audio, and pictorial data, now poses a serious threat to the viability of the "notebook" concept of establishing the date of any such document. Because electronic digital documents are so easily revised, and since such revisions may be made without telltale sign, there is available limited credible evidence that a given document truly states the date on which it was created or the message it originally carried. For the same reasons there even arises serious doubt as to the authenticity of a verifying signature. Without an effective procedure for ensuring against the surreptitious revision of digital documents, a basic lack of system credibility prevents the efficiencies of electronic documentation from being more widely implemented.

Some procedures are presently available for verifying electronic document transmissions; however, such procedures are limited in application to bilateral communications. That is, in such communications the sender essentially desires to verify to the receiver the source and original content of the transmitted document. For example, "private key" cryptographic schemes have long been employed for message transmission between or among a limited universe of individuals who are known to one another and who alone know the decrypting key. Encryption of the message ensures against tampering, and the fact that application of the private key reveals the "plaintext" of the transmitted message serves as proof that the message was transmitted by one of the defined universe. The time of creation of the message is only collaterally established, however, as being not later than its receipt by the addressee. This practice thus fails to provide time-stamp evidence that would be useful in an unlimited universe at a later date.

A more broadly applicable verifying communication procedure, that of "public key" cryptography, has been described by Diffie and Hellman ("New Directions in Cryptography", *IEEE Transactions On Information Theory*, Vol IT-22, November 1976, pp. 644-654). While this scheme expands the utilizing universe to a

substantially unlimited number of system subscribers who are unknown to one another, but for a public directory, verifiable communications remain bilateral. These limitations persist, since although a public key "signature", such as that which entails public key decryption of a message encrypted with the private key of the transmitter, provides any member of the unlimited universe with significant evidence of the identity of the transmitter of the message, only a given message recipient can be satisfied that the message existed at least as early as the time of its receipt. Such receipt does not, however, provide the whole universe with direct evidence of time of the message's existence. Testimony of a such a recipient in conjunction with the received message could advance the proof of message content and time of its existence, but such evidence falls victim to the basic problem of ready manipulation of electronic digital document content, whether by originator or witness.

Thus, the prospect of a world in which all documents are in easily modifiable digital form threatens the very substance of existing procedures for establishing the credibility of such documents. As a means of providing an answer to this burgeoning problem, we disclosed in our copending U.S. Pat. application Ser. No. 07/561,888, file Aug. 2, 1990, a system of verification by which a digital document may be so fixed in time and content that it can present, at least to the extent currently recognized in tangible documents, direct evidence on those issues.

The method described there entails transmittal of a document to an outside agency where current time data are incorporated with at least a portion of a digital representation of the document. In order to prevent collusive misstamping by the agency, one or more agencies are selected at random or an agency is required to incorporate into the time stamp receipt at least the time and a portion of identifying data from one or more temporally adjacent receipts. Although this procedure accomplishes the two-fold goals of effective time-stamping, i.e., to fix the time and content of a document and to prevent collusive misdeeds of author and agent-witness, any subsequent personal interaction between participating authors may be burdensome, particularly in later proof stages where the comparison of contemporary receipts is required.

## SUMMARY OF THE INVENTION

The present invention represents an improvement on our above-mentioned system and provides a reliable and more adaptable method of time-stamping digital documents that continues to maintain the two essential characteristics of accepted document verification. First, the content of a document and a time stamp of its existence are "indelibly" incorporated into the digital data of the document so that it is not possible to change any bit of the resulting time-stamped data without such a change being apparent. In this manner, the state of the document content is fixed at the instant of time-stamping. Second, the time at which the digital document is stamped is certified by a cryptographic summary, or catenation, procedure that deters the incorporation of a false time statement. In essence, the method transfers control of the time-stamping step from the author to an independent agent and removes from the author the ability to influence the agent in the application of other than a truthful time stamp.

One embodiment of the present invention presumes a number of document authors distributed throughout a communication network. Such authors may be individuals, companies, company departments, etc., each representing a distinct and identifiable, e.g., by ID number or the like, member of the author universe. This universe would be supported by a central record repository and would, in essence, constitute the clientele of such an outside time-stamping agency (TSA).

In this particular application, as depicted in FIG. 1 of the drawing, the method entails an author's preparation of a digital document, which may broadly comprise any alphanumeric, audio, or pictorial presentation, and the transmission of the document, preferably in a condensed representative form, to the TSA. The TSA time-stamps the document to create a receipt by adding digital data signifying the current time, concatenates the receipt with the current cryptographic catenation of its prior time stamp receipts, and creates a new catenation from the composite document by means of a deterministic function, such as discussed in greater detail below. The resulting catenate value is then included with time and other identifying data in a document, now a certificate of the temporal existence of the original document, which is transmitted back to the author where it will be held for later use in any required proof of such existence.

To ensure against interception of confidential document information during transmission to the TSA, and to reduce the digital bandwidth required for transmission of an entire document, the author may optionally convert the digital document string to a unique value having vastly condensed digital size by means of a deterministic function which may, for example, be any one of a number of algorithms known in the art as "one-way hash functions". Such an application of hash functions has been described, among others, by Damgard in his discussions on the improvement of security in document signing techniques ("Collision-Free Hash Functions and Public Key Signature Schemes", *Advances in Cryptology—Eurocrypt '87*, Springer-Verlag, LNCS, 1988, Vol. 304, pp. 203-217). In practice of the present invention, however, the "one-way" characteristic typical of a hashing algorithm serves an additional purpose; that is, to provide assurance that the document cannot be secretly revised subsequent to the time the TSA applies its time stamp and incorporates the document into the catenate certificate.

A hashing function provides just such assurance, since at the time a document, such as an author's original work or a composite receipt catenation, is hashed there is created a representative "fingerprint" of its original content from which it is virtually impossible to recover that document. Therefore, the time-stamped document is not susceptible to revision by any adversary of the author. Nor is the author able to apply an issued time-stamp certificate to a revised form of the document, since any change in the original document content, even to the extent of a single word or a single bit of digital data, results in a different document that would hash to a completely different fingerprint value. Although a document cannot be recovered from its representative hash value, a purported original document can nonetheless be proven in the present time-stamping procedure by the fact that a receipt concatenation comprising a true copy of the original document representation will always hash to the same catenate

value as is contained in the author's certificate, assuming use of the original hashing algorithm.

Any available deterministic function, e.g. a one-way hash function such as that described by Rivest ("The MD4 Message Digest Algorithm", *Advances in Cryptology—Crypto '90*, Springer-Verlag, LNCS, to appear), incorporated herein by reference, may be used in the present procedure. In the practice of the invention, such a hashing operation is optionally employed by the author to obtain the noted benefit of transmission security, although it might be effected by the TSA if the document were received in plaintext form. In whatever such manner the document content and incorporated time data are fixed against revision, there remains the further step, in order to promote the credibility of the system, of certifying to the members of an as yet unidentified universe that the receipt was in fact prepared by the TSA, rather than by the author, and that the time indication is correct, i.e., that it has not, for instance, been fraudulently stated by the TSA in collusion with the author.

To satisfy these concerns, the TSA maintains a record of its sequential time-stamping transactions by adding each new receipt to its current catenation and applying its deterministic function, e.g. hashing, the composite to obtain a new catenation. This catenation, itself a value resulting from the hashing process, is included on the receipt or certificate returned to the author and serves to certify the indicated time stamp. Confirmation of the certificate at a later time involves rehashing the combination of the author's time receipt and the next previous catenate value in the TSA records. The resulting generation of the author's catenate certificate value proves to the author and to the universe at large that the certificate originated with the TSA. This result also proves the veracity of the time-stamp itself, since all original elements of the original receipt must be repeated in order to again generate, by the hashing function, the original catenate certificate value.

The process of the invention relies upon the relatively continuous flow of documents from the universe of authors through the facilities of the TSA. For each given processed document  $D_k$ , from an author,  $A_k$ , the TSA generates a time-stamp receipt which includes, for example, a sequential receipt transaction number,  $r_k$ , the identity of the author, for example by ID number  $ID_k$ , or the like, a digital representation, e.g. the hash,  $H_k$ , of the document, and the current time,  $t_k$ . The TSA then includes these receipt data, or any representative part thereof, with the catenate certificate value,  $C_{k-1}$ , of the immediately preceding processed document  $D_{k-1}$ , of author,  $A_{k-1}$ , thereby bounding the time-stamp of document  $D_k$  by the independently established earlier receipt time,  $t_{k-1}$ .

The composite data string,  $r_k, ID_k, H_k, t_k, C_{k-1}$ , is then hashed to a new catenate value,  $C_k$ , that is entered with transaction number,  $r_k$ , in the records of the TSA, and is also transmitted to  $A_k$ , as the catenate certificate value, with the time-stamp receipt data. In like manner, a certificate value derived from the hashing of  $C_k$  with time stamp elements of the receipt for document  $D_{k+1}$ , would be transmitted to author,  $A_{k+1}$ . Thus, each of the time-stamped catenate certificates issued by the TSA is fixed in the continuum of time and none can be falsely prepared by the TSA, since any attempt to regenerate a catenate certificate number from a hash with the next prior certificate would reveal the discrepancy.

In a more general application of the invention, as shown in FIG. 2, the representation, e.g., a hash, of a particular document is simply concatenated with the catenate certificate value of the next previous document and the deterministic function representation, again a hash, for example, of this composite is then generated and retained as the record catenate value for the particular document. Each subsequent document in the growing series is similarly processed to expand the record which itself would serve as a reliable certification of the position each such document occupies in the series, or more broadly viewed, in the continuum of time. This embodiment of the invention provides a reliable method by which an organization, for instance, could readily certify the sequence and continuity of its digital business documents and records.

Additional variations in the process of the invention might include the accumulation of documents, preferably in hashed or other representative form, generated within an author organization over a period of time, e.g., a day or more depending upon the extent of activity, with the collection being hashed to present a single convenient document for time-stamping and certification. As an alternative, an organizational designee might serve as a resident "outside" agency who would maintain a catenate certificate record of organization documents by means of the present procedure and on a regular basis would transmit the then current catenate certificate to a TSA. In this manner the sequence of an organization's business records would be established both within the organization and externally through the TSA.

Also, the implementation of process embodiments might readily be automated in simple computer programs which would directly carry out the various steps of hashing, transmitting, and concatenating original document representations, applying current time stamps, generating and recording catenate certificate values, and providing receipt certificates.

#### THE DRAWING

The present invention will be described with reference to the accompanying drawing of which:

FIG. 1 is a flow diagram of an embodiment of the time-stamping process according to the invention; and

FIG. 2 is a flow diagram of the general catenation process according to the invention.

#### DESCRIPTION OF THE INVENTION

The following exemplary application of the present invention, as depicted in the steps of the drawing, will serve to further describe the time-stamping process. For convenience in the presentation of this example, the deterministic function employed is the md4 hashing algorithm described by Rivest, as mentioned above; however, the function actually selected by a TSA could be any of various available algorithms. Whatever algorithm is implemented, records of its identity and period of use must be maintained for later proof of certified receipts.

The present time-stamping procedure begins, as at step 11 of the drawing, with the preparation of a digital document by the author, e.g.,  $A_k$ . As previously noted, this digital document may be the digital form or representation of any alphanumeric text or video, audio, pictorial or other form of fixed data. Although the present process may be used with documents of any length,

the following excerpt is amply representative of a document,  $D_k$ , for which time-stamping is desired:

... the idea in which affirmation of the world and ethics are contained side by side ... the ethical acceptance of the world and of life, together with the ideals of civilization contained in this concept ... truth has no special time of its own. Its hour is now—always.

Schweitzer

If the author so desires, the document,  $D_k$ , may, for the purposes of security as well as to reduce the required transmission bandwidth, be condensed by means, for example, of the md4 algorithm. As indicated by the optional, dashed step 12, the document is thus hashed to a value,  $H_k$ , of a standard 128 bit format which, expressed in base 16, appears as:

ee2ef3ea60d7f0cb621c4fb3f8dc34c7

It should be noted at this point that the hexadecimal and other numerical value representations used in this example are not in such form crucial to the implementation of the invention. That is to say, any portion or other distinct representation of those values selected according to a given procedure would function as well.

Author,  $A_k$ , whose assigned identification number,  $ID_k$ , is 634 in a 1000 member author universe, then transmits the document, at step 13, to the system TSA in the identifying message,  $(ID_k, H_k)$ , which appears:

634, ee2ef3ea60d7f0cb621c4fb3f8dc34c7

as a request that the document be time-stamped.

The TSA, at step 14, prepares the receipt for document,  $D_k$ , by adding a sequential receipt transaction number,  $r_k$ , of 1328, for example, and a statement of the current time,  $t_k$ . This time statement might be a standard binary representation of computer clock time or simply a literal statement, e.g., 19:46:28 Greenwich Mean Time on Mar. 6, 1991, in order to allow the final time-stamp certificate to be easily read. The receipt then comprises the string,  $(r_k, t_k, ID_k, H_k)$ , which appears as follows;

1328, 194628GMT06MAR91, 634,  
ee2ef3ea60d7f0cb621c4fb3f8dc34c7

In accordance with the invention, the records of the TSA at this time contain a catenation of all its prior receipt transactions in the form, for example, of the values resulting from the hashing of each consecutive receipt with the record catenation to that time. This catenate record would thus have been developed as follows. The receipt of first transaction ( $r_{k=1}$ ) was hashed with an initial datum value, e.g., the hash of the identification of the TSA, to yield the first catenate value,  $C_1$ , which was then used as the certificate value for that first transaction. In the next transaction, the receipt was concatenated with  $C_1$  and the composite hashed to yield the second catenate certificate value,  $C_2$ , and so on through the entire history of the TSA time-stamping operation.

Assume now that the document,  $D_{k-1}$ , immediately preceding that of the present example had been processed by the TSA, in its 1327th receipt transaction, to yield as the catenate certificate value,  $C_{k-1}$ :

26f54e9e925156b1f0d6047c2dc6e0fcf

In step 15 of the process, the TSA now concatenates with this value the receipt for  $D_k$  to obtain:



26f54eac92516b1f0d6047c2de6e0fcf, 1328,  
194628GMT06MAR91, 634,  
ee2ef3ea60d1f0cb621c4fb3f8dc34c7

This composite is then hashed by the TSA, at step 16, to yield as the new catenate certificate value,  $C_k$ :

46f7d75f0fben95e96fc38472aa28cal

The TSA then adds this value to its records and prepares and transmits to author,  $A_k$ , at step 17, a time-stamp certificate, including this catenate certificate value, which might appear as:

Transaction Number:	1328
Client ID Number:	634
Time:	19:46:28 Greenwich Mean Time
Date:	06 March 1991
Certificate Number:	46f7d75f0fben95e96fc38472aa28cal

The procedure would be repeated by the TSA for each subsequent time stamp request. Assuming the next request from  $A_{k+1}$  was received with the document in the form of its hash  $H_{k+1}$ , as:

201, 882653ee04d511dbb5e06883aa27300b

at 19:57:52 GMT on Mar. 6, 1991, the composite concatenation would appear:

46f7d75f0fben95e96fc38472aa28cal, 1329,  
195752GMT06MAR1991, 201,  
882653ee04d511dbb5e06883aa27300b

and the certificate returned to  $A_{k+1}$  would read:

Transaction Number:	1329
Client ID Number:	201
Time:	19:57:52 Greenwich Mean Time
Date:	06 March 1991
Certificate Number:	d9bb1b11d58bb09c2763e7915fbb83ad

When, at a later date, author,  $A_{k+1}$ , desires to prove the authenticity of document,  $D_{k+1}$ , as that which was received and dated by the TSA on Mar. 6, 1991 at 19:57:52, the records of the TSA are examined to obtain the catenate certificate value,  $C_k$ , of the next previous transaction, 1328, which appears as:

46f7d75f0fben95e96fc38472aa28cal

The alleged document is then reduced to the form in which it was transmitted to the TSA, e.g., as its hash, and this value is then concatenated with  $C_k$  and the remaining data from the certificate of  $A_{k+1}$ . The resulting composite, assuming the alleged document to be authentic, now appears as:

46f7d75f0fben95e96fc38472aa28cal, 1329,  
195752GMT06MAR1991, 201,  
882653ee04d511dbb5e06883aa27300b

which, when hashed, produces the correct catenate certificate value:

d9bb1b11d58bb09c2763e7915fbb83ad

thereby proving the alleged document to be  $D_{k+1}$ . Otherwise, a revised document would hash to a different value and the composite of which it is an element

would hash to a catenate certificate value different from that stated in the certificate of transaction number 1329.

If further proof were demanded, for example upon an adversary allegation that  $C_{k+1}$  had been falsified after the fact of a document revision, the certificate and the submitted, e.g., hashed, document of  $A_k$ , who is identified from TSA records, would be employed in an attempt to regenerate the subsequent, questioned certificate value,  $C_{k+1}$ . If that value were correct,  $D_{k+1}$  would be proved. As an alternative, the certificate value,  $C_{k+1}$ , could be proved by the regeneration of the subsequent catenate certificate value,  $C_{k+2}$ , from the certificate data and submitted document of  $A_{k+2}$ , since no feasible revision could be made to that later document which would result in a match of  $C_{k+2}$  if  $C_{k+1}$  were not the same as existed at the time of the transaction, 1330, processing  $D_{k+2}$ .

In the more general record catenation procedure depicted in FIG. 2, the documents in a growing series are processed, within an organization or by a TSA, as each is generated. At step 21, a new document representation, such as would be generated by a hashing deterministic function algorithm, becomes available and, at step 22, is concatenated with the current record catenate value that was generated in the processing of the previous document. This composite is then processed, e.g., hashed, at step 23, to generate the new catenate value for the present document. This value may be separately recorded and utilized for inclusion in a certificate, or simply retained in the processing system for application to the next document which is presented at step 24. The subsequent processing steps 25, 26 are applied to this document representation, and the process repeats with each new document in its turn.

The procedures described and variants suggested herein for the practice of this time-stamping process and the various other embodiments which will become apparent to the skilled artisan in the light of the foregoing description are all nonetheless to be included within the scope of the present invention as defined by the appended claims.

What is claimed is:

1. A method of certifying the temporal sequence of digital documents in a series of such documents characterized in that said method comprises:

- a) generating a digital representation of a specified one of the documents in said series; and
- b) generating a catenate certificate value representation for said specified document by applying a selected deterministic function algorithm to a catenation comprising said digital representation and the catenate certificate value representation for the document immediately prior in said series to said specified document.

2. A method according to claim 1 characterized in that the method further comprises repeating the recited steps with each subsequent document in said series.

3. A method according to claim 2 characterized in that said method further comprises maintaining a sequential record of said series documents with their respective catenate certificate value representations.

4. A method according to claim 2 characterized in that each said digital representation is generated by applying to said document one or another deterministic function algorithm which

may be the same as or different from said selected deterministic function algorithm.

5. A method according to claim 4 characterized in that said one or another deterministic function algorithm is any one-way hashing algorithm.

6. A method according to claim 2 characterized in that said selected deterministic function algorithm is any one-way hashing algorithm.

7. A method of time-stamping a digital document 10 which comprises transmitting a digital representation of said document to an outside agency, creating at said outside agency a receipt comprising a digital representation of then current time and at least a portion of a digital representation of said digital document, and certifying said receipt at said outside agency 15 characterized in that the certifying of said receipt comprises:

- a) concatenating a digital representation of said receipt with a representation of a prior catenate 20 certificate value to form a composite; and
- b) generating a catenate certificate value for said receipt by applying a selected deterministic function algorithm to said composite.

8. A method of time-stamping a digital document 25 according to claim 7 characterized in that said outside agency maintains a record comprising the catenate certificate values of prior time-stamping transactions.

9. A method of time-stamping a digital document 30 according to claim 7

characterized in that said prior certificate value representation comprises at least a portion of the catenate certificate value of the immediately preceding recording time-stamping transaction.

10. A method of time-stamping a digital document according to claim 7

characterized in that said selected deterministic function algorithm is any one-way hashing algorithm.

11. A method of time-stamping a digital document according to claim 7

characterized in that said transmitted digital document representation comprises at least a portion of the digital representation of the value derived by applying to said digital document one or another deterministic function algorithm which may be the same as or different from said selected deterministic function algorithm.

12. A method of time-stamping a digital document according to claim 7

characterized in that said receipted digital document representation comprises at least a portion of the digital representation of the value derived by applying to said digital document one or another deterministic function algorithm which may be the same as or different from said selected deterministic function algorithm.

13. A method of time-stamping a digital document according to claim 12

characterized in that said one or another deterministic function is any one-way hashing algorithm.

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07/03/2001 - Updated 08:40 AM ET

### More car dealers now videotape sales

By Earle Eldridge, USA TODAY

The next time you sign the paperwork to buy a new car, the dealer may be videotaping you, a move that alarms privacy advocates.

Dealers say there's no need to worry, that they are taping the final sales transactions simply to:

- Prevent their finance and insurance staff — the people who generally handle document signing — from overselling extras or misleading customers.
- Make sure customers fully understand what they are buying.
- Make sure all extras are offered to every customer.
- Handle claims that customers were mistreated or lied to.

"I wanted to be sure that we were properly disclosing the transaction that took place in that office," says Bob Giles, a Nissan dealer in Lafayette, La.

But some privacy advocates question the practice. Marc Rotenberg, president of the Electronic Privacy Information Center in Washington, says more businesses are installing cameras to monitor staff and customers, but that "pushes the envelope of acceptable business practices."

Michael Howell, president of Auto Gap, a Madisonville, La., dealer management firm, began selling a video camera setup 3 years ago. He has 50 dealers in 18 states signed up. Dealers who use Auto Gap's extended warranty program get the cameras as part of the deal.

The dealers post a sign telling the customer that the transaction will be videotaped for security and training purposes. Howell tells them to turn off the camera if a customer complains.

Rotenberg says consumers should have a right to say they don't want to be videotaped and that the signs should be posted prominently.

One privacy concern: that dealers may spy on customers as they debate the merits of the deal when the finance person steps away. "People ought to be able to have a conversation out of earshot of the microphones," says Barry Steinhardt, associate director of the American Civil Liberties Union.

Dealers say they don't monitor sales as they occur and don't coach staff in the middle of a transaction.

Dealers say tapes have helped customers as well as themselves.

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Sign

Allen Krake, a Ford dealer in Metairie, La., says he bought back a \$35,000 Ford Expedition because the customer thought he was buying, not leasing, and the videotape backed the customer.

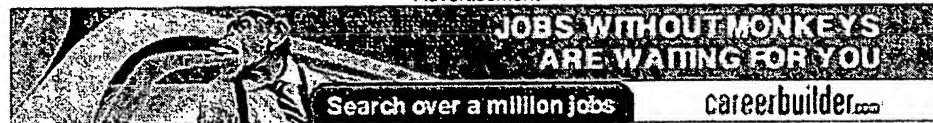
Some dealers want to make sure finance staff aren't selling customers monthly payments before disclosing that the price includes extras like an extended warranty and life insurance.

"People get lazy and instead of selling the (extra) product on its merits, they sign the buyer and include it in the payments. That's not right," Krake says.

But Jack Fitzgerald, a Washington-area dealer, called the cameras outrageous. "I think it's terrible. They are monitoring their finance people to make sure they don't lie to you. They shouldn't have that person on the staff."

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**Appendix D. SHIM, JOAN, "LIGHTS, CAMERA, DISCLOSURE!" F&I MANAGEMENT & TECHNOLOGY, MAY/JUNE 2004.** (originally submitted with Applicant's Response to Final Office Action filed March 29, 2006)(online version submitted herewith for better clarity).

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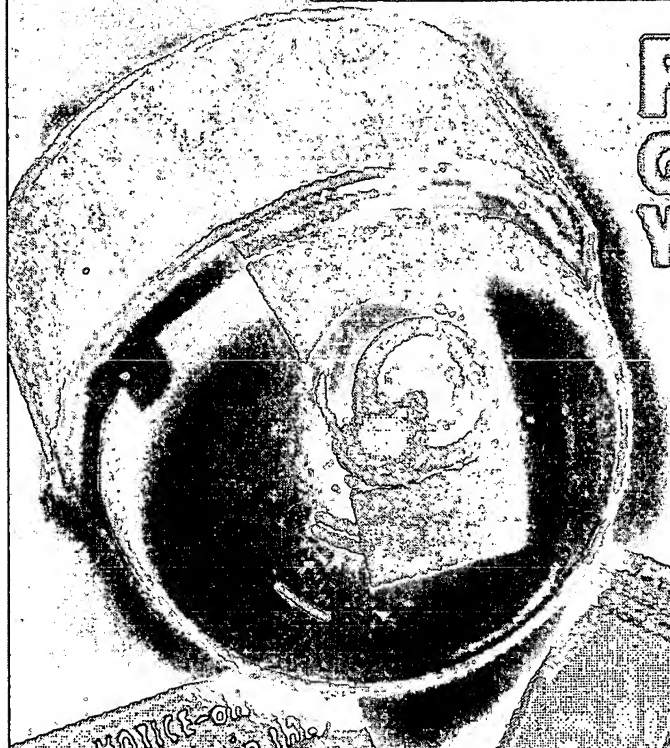
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May 2004

## Lights, Camera, Disclosure!

By Joan Shim



*Taping F&I managers in action has helped dealers bring in hundreds of dollars more per car -- and saved them tens of thousands in legal fees.*

Hall Automotive Group in Virginia Beach, Va., started recording F&I transactions last year to keep legal problems at bay. Since then, recording has had other unforeseen benefits.

"I've actually used footage to help the police catch a felon who stole someone else's identity," says Fred Miller, executive vice president of Hall Automotive.

The customer walked into a Hall dealership attempting to buy a car with the stolen identity. He made it past the salesperson but was foiled in the F&I office. Right when the customer walked in, the finance manager explained -- on camera -- the dealership policy of recording transactions. The customer adamantly refused to be recorded and left.

The finance manager suspected something was wrong and called the police. The police came in, reviewed the recording and identified the customer as a wanted felon suspected of running a car theft operation. Using the footage, the police arrested the man shortly after.

Although most dealers aren't regularly fighting crime with cameras, they've found that recording transactions benefits their business from several angles. Cameras in the F&I office have proven

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instrumental for legal protection, training and to ensure proper disclosure.

### **Just for the Record**

After seeing the steady stream of press about state attorney general offices investigating F&I practices, the executives at the Roger Beasley Auto Group decided to start recording.

"I felt it was the best way to ensure that the integrity we expected of our people was being upheld," says Jim Bagan, executive vice president for the Roger Beasley Group, based in Austin, Texas. "The real hook was the liability protection the cameras provided against misrepresentation of my people, the dealership or the consumer."

Bagan oversees F&I for the four Roger Beasley Mazda stores in the Austin area. Since installing the cameras, he recalls five times when a customer or attorney tried to accuse the dealership of some misbehavior. Each time, he offered to meet with them to review the recordings and the complaint went away.

Red McCombs Automotive Group initially started taping for training purposes. "I quickly observed that recordings had value to be able to refresh a customer's memory about what actually transpired during the closing," says Herman Ford, chief operating officer of McCombs Automotive. The Texas-based dealer group started taping transactions on VHS about four years ago. It has since gone to digital recording (see the related sidebar).

Once a customer purchased a very expensive vehicle that happened to be out of the manufacturer's warranty, remembers Ford. The finance manager pleaded with the consumer to consider purchasing a service contract. The customer stubbornly refused.

"As luck would have it, within 30 days he had a major engine failure and wanted the dealership to handle it," says Ford. "He tried to say that he wasn't aware that there wouldn't be a warranty; he assumed everything came with at least a 90-day warranty."

Fortunately, the dealership had on tape the customer's refusal of the service contract and the finance manager telling him there would be no coverage. "I'm convinced that this would have resulted in some sort of filing against us had we not had strong evidence that he knew exactly what refusing coverage meant," says Ford.

One F&I manager finds that recording transactions ends the "he said, she said" that happens when a customer complains. "Now it isn't my word against the customer's word. It's there on camera," says Anthony Fortes, finance director at Saturn of Warwick (R.I.).

Cameras also enable dealer groups to deliver a consistent message across multiple stores.

"One dealer said installing cameras has 'McDonaldized' the F&I process," says Carl Farris, president of ADS Management Group. Virginia-based ADS works with about 350 dealerships on the East Coast.

The mere presence of cameras holds F&I staff instantly accountable for giving by-the-book presentations. "Finance managers are aware that they're being taped. That keeps them honest in following the process," says Jim Klimas, general manager at Herb Chambers Dodge in Danvers, Mass.

### **Customers on Camera**

One concern in monitoring the F&I box is the effect it might have on customers. Is it too intrusive? Will it make customers defensive? Will it affect the interaction and your chances of selling to them? Will they get up and leave?

Ford of the McCombs Group says customers are used to being recorded. "You're taped at banks, airports -- it's so common everywhere. I just think people view it as normal business," he says.

Customers are actually comforted and reassured by the cameras, says Bagan. Seven out of 10 customers at Roger Beasley Mazda will look at the camera and start waving when they're told the transaction is being recorded.

"Most customers walk into the box prepared for something ugly to happen. They've heard all the nightmarish stories," explains Bagan. But once they hear that the transaction is being recorded for their protection, their guards go down and their demeanors change. Bagan has seen this happen repeatedly while reviewing the tapes.

Miller of Hall Automotive says that after watching hundreds of videos, he has not once seen a customer looking uncomfortable or constantly looking at the camera. Customers seem to forget they're being taped once they hear it's for everyone's protection.

### **Watching Tape**

Athletes aren't the only ones who train by watching tape. Dealership management can review actual F&I transactions to identify coaching opportunities. Finance managers can watch themselves on tape to fine-tune their presentations and work on their tone, mannerisms and interpersonal skills.

"I equate it to improving your golf swing," says Dave Frisbie, president of Profit Portfolio, F&I partner of the Herb Chambers Group. "I had never seen my golf swing and, when I did, it was easier to correct problems with the swing."

Frisbie will review a snippet of a manager's footage if his or her numbers fall. He will also pull tapes of managers with exceptional performance so that others can learn from them.

Dealership management usually does not know how F&I people actually cover the contract because they do it behind closed doors, says Ford. At the McCombs Group, management reviewed recordings and discovered that some F&I people were rude and unfriendly. Many of them would rush through the presentation and finish too quickly. Ford says he was able to address these shortcomings.

At Roger Beasley Mazda, tapes revealed that one manager was pointing at and talking down to the customer. The manager saw himself on tape and corrected his behavior. He was selling more the very next day, says Bagan.

At Hall Automotive, management even uses the footage to better train salespeople in the skill of turnover. "It's a training tool for the salespeople because they are in the initial taping when the customer comes into the finance office," says Farris. "There's a procedure for a proper turnover to the finance office. That's recorded and they're able to critique it."

**Continued...**

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### F&I Managers on the Record

Many F&I managers initially aren't too happy with the idea of their transactions being recorded. "There was a lot of resistance from F&I managers in the beginning, as with most changes," says Ford.

But the majority have learned to accept the recording.

"Now it's just a part of doing business," says Jeff Davis, general manager at Herb Chambers Honda of Boston. "It took some time to reinforce it and let the managers understand that we weren't using it for punitive reasons."

Finance managers who are confident in the integrity of their presentations seem comfortable being recorded. "My top performers said they have nothing to hide. Others were skeptical," says Frisbie.

Saturn of Warwick's Fortes not only accepted that his transactions would be recorded, he welcomed it.

"It was a natural transition because if you know you're doing things right and you believe in full disclosure, there's nothing to worry about," he explains. "I didn't have a problem whatsoever."

### Recording Pays Off

Miller of Hall Automotive attributes per-vehicle retail increases of \$175 per car to a selling system that includes recording transactions. He uses the multimedia presentation and menu from Innovative Aftermarket Systems (IAS), along with the company's SmartEye NET system.

Because the system holds F&I managers to soliciting all customers all the time, Hall Automotive's service-contract penetration rose from 50 percent to about 62 percent. GAP rose from 27 percent to 42 percent, and car care climbed from about 28 percent to 35 percent.

The Roger Beasley Mazda dealerships have seen similar gains.

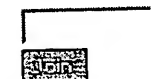
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"Before I had cameras I was running around \$575 a copy," says Bagan. "Since the cameras we're at \$850 a copy. I went from a 34 percent warranty penetration to 58 percent. I've had about a 10 to 12 percent bump across the board on all my products due to the simple fact that everybody gets presented everything every time."

Although other factors may have influenced these increases, it's indisputable that being taped has motivated finance managers to be thorough, consistent and conscientious.

### **A Double-Edged Sword**

Out of the 22,000 dealers nationwide, at least 600 to 700 are using the SmartEye recording system, says IAS President Bob Corbin.

Most camera-shy dealers seem deterred by the fact that cameras can catch their people doing something wrong. Customers and attorneys can use dealers' footage as evidence against them if an F&I person has indeed erred.

This is why Ferman Motor Car Co. doesn't record transactions. Stephen Straske, vice president and corporate counsel for Ferman, is apprehensive about recording. "Unless dealers have been vetted by their lawyers and consultants in every aspect of compliance, they can't have the confidence that all their people are doing things perfectly."

Straske continues to evaluate the recording approach but believes training and developing a compliance culture are most important. If you can standardize forms and work processes and ensure proper disclosure, recording might not be necessary. The risk, however, is that F&I managers might keep making dangerous mistakes unless someone starts monitoring them.

"A dealer who isn't being proactive is eventually going to become a target," says Johnny Garlich, president of Heart Dealer Financial Services in St. Louis. Garlich recently moved some major dealers to SmartEye NET.

"The current breed of plaintiffs' attorneys are looking to use unfair trade practices as a lever to force the dealer to pay legal fees," says Garlich. "The result is that a small judgment rendered for the consumer can translate to a large legal bill for the plaintiff attorney that the dealer is obligated to pay."

Corbin says it's better for dealers to catch the errors on their own cameras than for "20/20," "60 Minutes" or "Dateline" to catch them.

"If you're illegal today, you need to get legal whether you record or not," says Corbin. "Recording is just a very inexpensive and effective way to spot-check F&I people."

Another objection Corbin hears from dealers is that managers might not sell as aggressively or be as thorough under the pressure. Their nervousness might affect the numbers. But in most instances, dealers' numbers have gone up as a result of recording.

Other dealers, particularly smaller ones, don't want to pay for

recording technology, says Jim Ganther, general counsel for Continental-National Services Corp. However, it might save dealers money in the long run.

"It's cheaper than your first lawsuit, even if you win," says Ganther. "You'll rack up tens of thousands of dollars in legal fees. This is money well spent in defense."

Ganther says the decision to record should be made on a dealership-by-dealership basis. The dealer should weigh the risk of getting something wrong on tape against the ability to train personnel and reduce the chance of litigation.

### **Tips for Taping**

Dealers considering cameras in their F&I offices should do the following as a rule of thumb:

- Have a clearly displayed sign explaining that the transaction is being recorded for the customer's protection and for training purposes. Direct customers' attention to the sign and the camera so they are fully aware of the policy.
- Get the customer's consent -- or refusal -- to be recorded, on tape. Even a customer's refusal may come in handy if that customer ever has a complaint or attempts to take you to court.
- Make sure the customer and F&I manager are both clearly in the camera's view and audible.
- Have a written policy of how long the recordings will be kept on file.

Also, find out the state's specific wiretapping laws. "When it comes to taping, there's no standard rule for what consent from the customer you'll need," says Straske. In Florida, where Ferman Motor Car Co. is located, you need the customer's consent when videotaping with sound.

The Reporters Committee for Freedom of the Press in Arlington, Va., offers summaries of wiretapping laws for all 50 states on its Web site ([www.rcfp.org/taping/states.html](http://www.rcfp.org/taping/states.html)).

### **Sidebar: Recording Technology**

Dealers who started taping several years ago used bulky cameras and VHS tapes. Today, vendors offer streamlined equipment, digital technology, more functionality and easier data storage.

SmartEye, from Texas-based Innovative Aftermarket Systems, includes a ceiling-mounted, full-color dome camera that is a few inches wide. Transactions are digitally recorded and can be burned onto CDs. With SmartEye NET, dealers can archive footage on the Internet. All transactions are backed up to a secure IAS server, and authorized users can access them from any Web browser.

SmartEye NET costs \$250 for hardware and \$2 per transaction for Internet archival. The software is free.

The SmartEye system lets dealers record only customer transactions. They are stored in a searchable database and can be

pulled up using time, customer name, or type of transaction. For example, a dealer can access all transactions where a customer declined a service contract, says Matt Nowicki, IAS director of information technology.

The Finance Profit Center in Kokomo, Ind., offers a system that can include audio and video recording with Web storage and retrieval. The pricing varies depending on what products the dealer selects with the system.

Camera Ready in New Orleans started installing cameras in dealerships about five years ago. The company just developed an automated digital system that it hasn't yet introduced.

The cost for basic equipment alone is approximately \$3,000, says Mike Howell, president of Camera Ready. The system records transactions by date, time and camera or office number.

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